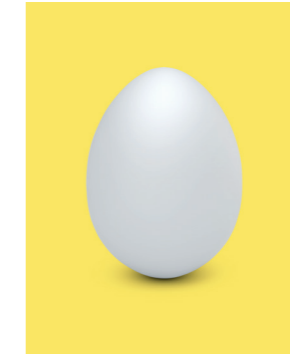# ETH zürich

Computer Science

Master of Science ETH

D INFK

Information forms the basis of countless possibilities and questions. Can a problem be solved or not? If so, how long will it take? How can we instruct a machine to solve a problem in the most efficient way? What language do we use in our instructions? How can we find patterns in a mountain of data? What can we make of information in the form of a painting or sculpture? How can we automate learning or decision-making? What if the process must be infallible? And how do we put all this into practice in the real world?

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Three reasons why:
Computer science at ETH Zurich

Computer science at ETH Zurich stands for state-of-the-art research, expert teaching and excellent education at one of the world's leading universities, located in one of Europe's most enjoyable cities.

Profound and in-depth education

ETH's Department of Computer Science runs a broad Master's programme with five different majors, taught exclusively in English. Its structure allows students to choose from a variety of courses and to tailor the curriculum to meet their particular interests, needs and goals. The objective is to help students to receive an in-depth education in their field of choice while also becoming creative and efficient problem-solvers in the general domain of computer science.

Besides imparting knowledge and skills to students to help them in their future career, ETH places great emphasis on the development of cross-disciplinary competences such as critical reflection and argumentation. The possibility of writing an interdisciplinary Master's thesis in cooperation with other ETH departments offers further fascinating opportunities.

Worldwide reputation

For students who want to receive the highest-quality education in a field that continues to change the world, ETH Zurich is the perfect choice.

The study programme is closely connected to the department's world-class research groups. Nine institutes and chairs, with about 500 academic staff compromising professors, post-doctoral and senior researchers and doctoral students, currently teach and undertake research. They are among the best in their field and maintain global connections and take part in collaborative projects with the most prestigious universities.

Students have ample opportunities to participate in exciting research projects, often in collaboration with industry or the local research centres of international companies.

Unique study environment

Studying at ETH Zurich is a unique experience. It is a highly stimulating place with a friendly, cooperative and respectful atmosphere, bringing together students from all over the world. Two campus locations, both distinguished by their prominent position and with modern infrastructures, are the perfect place for learning, research and leisure.

Professional administration teams help students get started, provide individual student counselling and give out academic advice. Committed student associations and commissions offer support during studies and exam periods, help people connect, and contribute to a diverse and inspiring culture. ∎

Olga Sorkine-Hornung
Professor of Computer Graphics

Our students are part of an international environment and benefit from diversity in their education. With faculty members who come from all over the world, different teaching methods, knowledge and experience flow into the lectures. At the same time, ETH Zurich is deeply rooted in Switzerland and has its own rich history and tradition. This combination is very stimulating, and helps our students develop not only professionally but also personally and prepares them for their future, as most will probably go on to work in international teams. ETH also enriches my life: I appreciate teaching because I learn so much from it myself. Only when you teach a subject to others do you really understand it well yourself.

Timothy Roscoe
Professor of Computing Platforms

Our Master's programme in computer science benefits greatly from its connections to companies in Zurich and the surrounding area. Zurich has a burgeoning IT industry scene. Many major IT companies either have significant research and engineering facilities in and around Zurich or have chosen to establish prestigious research labs in the area. Moreover, in part due to the presence of ETH, the Zurich start-up scene is flourishing, with many spin-offs having emerged from our department over the years. Our students benefit from the opportunity to do internships locally, and gain a valuable industrial perspective through guest lectures and the network of informal ties between the department and local industry.

David Basin
Professor of Information Security

Our study programme offers students the opportunity to combine fundamental, ground-breaking research with state-of-the art engineering. Through their studies and projects, students are provided with a rich spectrum of intellectual tools to shape the future of computing and applications. The courses offered include all the latest and most relevant computer science topics and allow students to undertake a dive deep into specialised areas. The programme is challenging, to be sure, but upon completion, students are extremely well qualified for either ambitious industry jobs or, if they opt to do so, continuing their training by pursuing a doctoral degree in research. The personal encounters and professional exchanges with our students and young researchers from all over the world are the most valuable aspects of my work.

A department of international renown

Founded in 1981 at the interface of mathematics, engineering and natural sciences, the Department of Computer Science (D-INFK) today holds a leading position worldwide.

Pioneering mission

Dedicated to undertaking basic research, the Department of Computer Science at ETH Zurich develops reliable, efficient and secure computer and IT solutions for use in society, industry and science. Moreover, while its main focus is on training computer scientists at the highest level, the department also provides computer science foundations to students of other disciplines, offers continuing education programmes and contributes to the high quality of general computer science education in local schools. It thus makes an important contribution to the excellence of education in society as a whole.

While maintaining longstanding, traditional ties with electrical engineering and mathematics, department researchers increasingly interact with other disciplines including physics, mechanical engineering and the life sciences. In addition, the department collaborates with numerous external centres and labs when developing certain topics, as part of joint research programmes or during outreach activities. Latest examples include the ETH AI Center and the Cyber Defence Campus.

A faculty of global standing

More than 45 professors from all over the world conduct their research and teach at the Department of Computer Science. They are among the best in their field and span the many facets of modern computer science, from the underlying theory to the design and construction of practical systems. Boasting a consistently high international ranking, the department is widely considered to be one of the best places in the world in which to study and undertake research in computer science.

Around 350 doctoral students and 110 post-doctoral and senior researchers contribute to maintaining the department's high level of teaching and research. Around 1,400 Bachelor's and 1,000 Master's students currently benefit from this excellent academic environment.

Strong research and business network

The department maintains strong ties with a wide network of top universities around the globe. Close cooperation with scientists abroad is an integral part of its research culture. This offers exciting prospects for students: they are able to enjoy lectures from international experts, experience collaborative learning with students from the best foreign universities or spend a semester at one of ETH's many partner universities through the exchange programme. The department also participates in intensive research collaborations with global IT players and research centres, such as DisneyResearch|Studios, Microsoft, IBM, SAP and Google, and with financial service companies such as ZKB and Six. Findings from such research flow directly into teaching.

Outstanding infrastructure

ETH Zurich offers state-of-the-art learning facilities, a modern infrastructure and highly qualified employees. One of its key strengths is the technology platforms that make specialist tools accessible. For instance, in the department's Computer Graphics Laboratory students can work with novel three-dimensional scanning technology developed at ETH Zurich. Students working on simulations and big data have access to its high-performance computing clusters, and for large-scale projects it is even possible to access the Swiss National Supercomputing Centre. ∎

www.inf.ethz.ch

A top-quality study programme with a flexible structure

The Master of Science ETH in Computer Science programme features a variety of comprehensive, advanced and in-depth learning tracks. The free choice of major and minor subjects ensures a flexible curriculum design.

Who can apply?

Applicants must hold a Bachelor's degree in computer science or must have graduated with distinction from a related field such as electrical engineering, physics or mathematics. A strong background in both practical and theoretical topics in computer science and mathematics is required.

Admission decisions are based on the curriculum of the applicant's Bachelor's programme, the level of mastery reached in each subject, their personal statement of purpose, the submitted reference letters and the reputation of their graduating university, among other factors. For further details, candidates should refer to the admission website.

Curriculum structure

Duration: 4 semesters
ECTS credits: 120
Language: English
Degree: Master of Science ETH in Computer Science

The Master's programme in computer science offers a profound and in-depth education in the core areas of computer science. The wide range of available courses and the flexible structure allow students to tailor their studies to meet their particular interests, needs and goals.

Students choose one of five majors. The degree programme structure is the same for each major, but the courses students may choose vary according to which major is selected.

The programme comprises several course categories. Each category requires a minimum number of credits to be gained, as listed below. 120 credits are required to complete the degree, of which at least 26 must come from the major subject chosen, within which 16 must come from core courses.

Master ETH Zurich in Computer Science	120
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Course categories

Majors

There are five majors to choose from. They form the basis of the Master's programme and ensure that students acquire a deep insight into specific subjects and achieve a high level of competence in their chosen area of specialisation.

1. Data Management Systems
Modern data management involves a wide variety of systems and functionality that form the basis of any software endeavour. From machine learning to websites, from electronic commerce to the Internet of Things, any modern application involves the management of large amounts of data.

This track covers the design, development, use, operation and application of data-management systems, including relational database engines, data streaming engines, key value stores, noSQL, Spark/Hadoop and other big data platforms, as well as semi-structured/graph data management systems. In terms of computing platforms, the track covers implementations ranging from single nodes to entire data centres, with a special emphasis placed on cloud computing. The track is organised to provide an in-depth look into data management systems via core courses, and to connect students, via elective courses, with relevant subjects closely related to modern data management systems.

Core courses:
– Big Data
– Data Management Systems
– Cloud Computing Architecture

Elective courses:
– Advanced Machine Learning
– System Security
– Deep Learning
– Design of Parallel and High-Performance Computing
– Informal Methods
– Advanced Operating Systems
– Principles of Distributed Computing

2. Machine Intelligence
Machine Intelligence pursues the goal of automatically creating models and design inference and decision procedures based on empirical evidence, i.e. data and human-provided knowledge. Notions of generalisation and learnability determine central conceptional challenges. Different modes of learning – including supervised, weakly supervised, unsupervised, online and adaptive learning – are studied through a rigorous mathematical and statistical framework.

The interplay of statistical estimation and computation touches on hardware architectures for machine learning, machine perception, high-performance computation and efficient information systems. An important aspect consists of developing intelligent systems that can cope with unstructured real-world data.

Core courses:
– Advanced Machine Learning
– Deep Learning
– Probabilistic Artificial Intelligence
– Machine Perception
– Optimisation for Data Science

Elective courses:
– Natural Language Processing
– Reliable and Trustworthy Intelligence
– Computer Vision
– Statistical Learning Theory
– Machine Learning for Health Care
– 3D Vision
– Guarantees for Machine Learning
– Artificial Intelligence in Learning
– Foundations of Reinforcement Learning
– Philosophy of Language and Computation
– Computational Semantics for Natural Language Processing
– Machine Learning for Genomics
– Interactive Machine Learning: Visualisation and Explainability
– Advanced Formal Language Theory
– Mathematics of Information
– Computational Statistics
– AI-Center Projects in Machine Learning Research

3. Secure and Reliable Systems
Secure and reliable systems are a cornerstone of the continued expansion and acceptance of the information society. Their development and analysis is at the heart of several research disciplines within computer science, including information security, programming languages and software engineering.

Students in this major programme learn how to systematically construct and analyse a range of secure and reliable modern systems, including software, hardware and networks.

Core courses:
– Concepts of Object-Oriented Programming
– Security Engineering
– System Security
– Design of Parallel and High-Performance Computing
– Network Security
– Applied Cryptography
– Program Analysis for System Security and Reliability
– Automated Software Testing

Elective courses:
– Security of Wireless Networks
– Reliable and Interpretable Artificial Intelligence
– Hardware Security
– Cryptographic Protocols
– Formal Methods for Information Security
– Advanced Encryption Schemes
– Zero-Knowledge Proofs
– Program Verification
– Digital Signatures

4. Visual and Interactive Computing
The digital processing of visual information has become a core topic in modern computer science and information technology. Building on theoretical foundations from computer science and applied mathematics, visual computing is central to a diverse array of application domains: image generation and analysis, computational photography, modelling and control of robotic systems, virtual and augmented reality, computational fabrication, user interfaces, interaction techniques and interactive devices, and more.

Methodologically, visual computing is rooted in computer graphics, algorithmic geometry, and digital image processing and computer vision. Strong conceptual and algorithmic links to computational sciences and machine learning provide visual computing with the tools that are necessary to solve large-scale visualisation and inference problems.

Core courses:
– Computer Graphics
– Computer Vision
– Shape Modelling and Geometry Processing
– Machine Perception
– Computational Models of Motion

Elective courses:
– Physically-Based Simulation in Computer Graphics
– Mathematical Foundations of Computer Graphics and Vision
– 3D Vision
– Mixed Reality
– Mobile Health and Activity Monitoring
– Interactive Machine Learning: Visualisation / Explainability
– Scientific Visualisation
– Virtual Humans
– Deep Learning for Autonomous Driving

5. Theoretical Computer Science
The goal of theoretical computer science is to understand the fundamental concepts of computation and information, which is comparable in spirit to the goal of physics: understanding fundamental concepts like matter and energy.

Topics include models of computation (from automata theory to quantum computers), algorithms and data structures, computability and computational complexity theory, information theory, and cryptography. Randomness is a core concept that spans all areas of theoretical computer science.

Core courses:
– Randomised Algorithms and Probabilistic Methods
– Advanced Machine Learning
– Geometry: Combinatorics and Algorithms
– Advanced Graph Algorithms and Optimisation
– Optimisation for Data Science
– Advanced Graph Algorithms and Optimisation

Elective courses:
– Probabilistic Methods in Combinatorics
– Cryptographic Protocols
– Approximation and Online Algorithms
– Algorithmics for Hard Problems
– Information Theory I
– Guarantees for Machine Learning
– Algebraic Methods in Combinatorics
– Linear and Combinatorial Optimisation
– Models of Computation
– Digital Signatures
– Graph Theory
– Network and Integer Optimisation: From Theory to Application
– Quantum Information Processing: Concepts

Minors

The objective of a minor subject is to cover a further computer science or an interdisciplinary subject area. To avoid over-specialisation, certain combinations of majors and minors are not permissible.

	Computer Graphics	Computer Vision	Data Management	Information Security	Machine Learning	Networking	Programming Languages and Software Engineering	Systems Software	Theoretical Computer Science
Data Management Systems	✓	✓	✕	✓	✓	✓	✓	✕	✓
Machine Intelligence	✓	✕	✓	✓	✕	✓	✓	✓	✓
Secure and Reliable Systems	✓	✓	✓	✕	✓	✓	✕	✓	✓
Visual and Interactive Computing	✕	✕	✓	✓	✓	✓	✓	✓	✓
Theoretical Computer Science	✓	✓	✓	✓	✓	✓	✓	✓	✕

Inter Focus Courses

The Inter Focus Courses cover cross-cutting computer science topics that are of central importance beyond the selected major and minors. They teach algorithmic reasoning – from real-world problems to algorithmic modelling and implementation – and introduce students to advanced systems design issues. The courses include:

– Algorithms Lab
– Information Security Lab
– Computational Intelligence Lab
– Advanced Systems Lab

Seminars

Seminars serve to train students in how to read and understand scientific publications. They usually build on previously attended lectures and promote active discussion among participants. Seminars often cover recent developments in a particular subject and provide an interesting way to learn about cutting-edge research.

Practical work

Practical work develops students' ability to solve technological scientific problems by applying acquired knowledge and social skills. It takes place within semester projects or lab courses, and is conducted under the supervision of a professor from the Department of Computer Science.

Free elective courses

All Master's level courses in the area of computer science or a closely related field, offered by ETH Zurich, EPF Lausanne and the University of Zurich may be chosen as free elective courses. This gives students the freedom to select from a huge variety of topics and to broaden their interdisciplinary perspectives by gaining insights into other subjects and experiencing life at other universities.

Science in perspective

Science in perspective is an integral part of the curriculum. Students learn to understand and critically question the correlations between scientific knowledge, technological innovations, cultural contexts, individuals and society. Students have a free choice of two credits from the Department of Humanities, Social and Political Sciences (D-GESS).

Master's thesis

The Master's thesis demonstrates a student's ability to use the knowledge and skills acquired during their Master's studies to solve a nontrivial computer science problem. It takes between four and six months to complete and usually marks the conclusion of the Master's programme.

Further details on the study programme can be found in the study guide: www.inf.ethz.ch/master-cs ∎
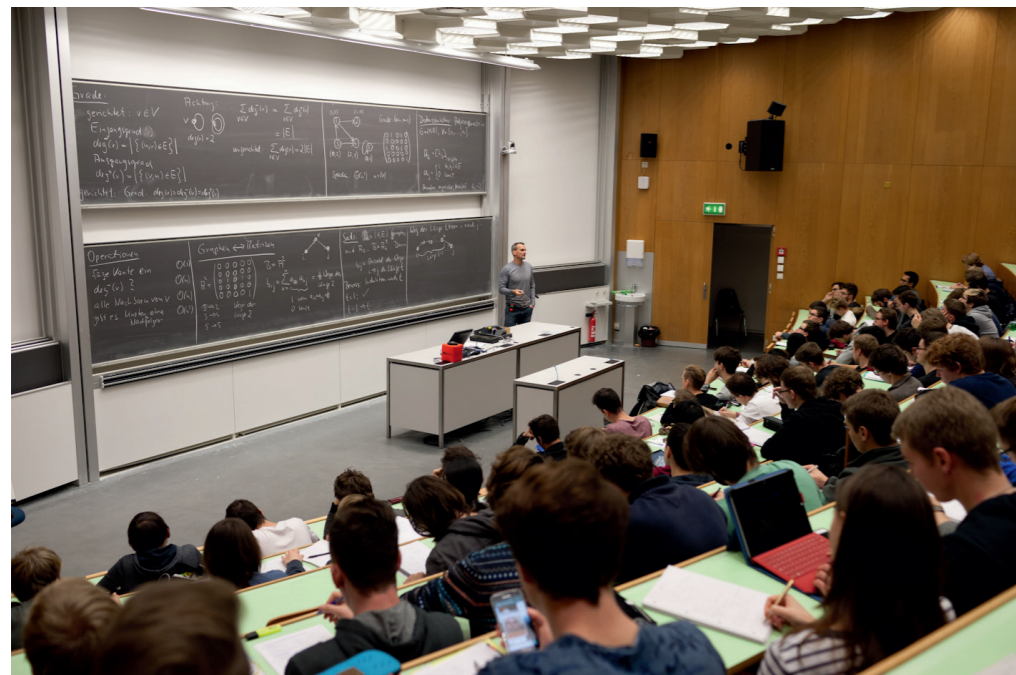
Specialised Master's programmes

As an alternative to the general Master of Science ETH in Computer Science described in this brochure, Bachelor's graduates can choose one of three specialised Master's programmes offered by the Department of Computer Science in cooperation with other departments.

Consecutive:

Master of Science ETH in Cyber Security
Today's global society and economy increasingly depend on the smooth processing of digital information. In turn, the need to protect data against misuse is also growing. Security technologies help to improve existing systems, make them more secure and protect them from hackers or criminal organisations. At the same time, they enable new applications and help to reshape society by challenging and redefining existing norms and assumptions when it comes to trust. In the cyber security Master's programme offered by ETH Zurich and EPF Lausanne as a joint degree, students are trained to solve important security problems in computer systems, networks and applications. They are able to choose their specific path from a wide range of courses and, after successfully completing their studies, use their knowledge to help develop secure information infrastructures that serve important needs both today and in the future.

www.inf.ethz.ch/master-cybsec

With admission:

Master of Science ETH in Data Science
Computers have fundamentally changed the way we produce, manage, process and analyse data. In light of the continuous growth of data all around the globe, the question of how we can use it to gain valuable insights is more important than ever. How can relevant information be extracted from the massive amounts of data generated on a daily basis? In which ways can computers learn from experience to make intelligent decisions? These questions are key to the specialised data science Master's programme, which is jointly run by the Departments of Mathematics (D-MATH), Information Technology and Electrical Engineering (D-ITET), and Computer Science (D-INFK) at ETH Zurich.

www.inf.ethz.ch/data-science

Master of Science ETH in Robotics, Systems and Control
The development of intelligent robots and systems requires knowledge in diverse areas of expertise. It raises fundamental questions on how best to design, model and control complex and highly interactive systems. Bridging the gap between various engineering disciplines, this programme offers students a unique learning environment and a multidisciplinary education that will enable them to develop innovative and intelligent products and systems to meet today's most pressing challenges: energy supply, the environment, health care and mobility. This specialised programme is offered jointly by the Departments of Mechanical and Process Engineering (D-MAVT), Information Technology and Electrical Engineering (D-ITET), and Computer Science (D-INFK) at ETH Zurich.

www.master-robotics.ethz.ch

Students' voices

From the Master's level onwards, the student body is as international and diverse as the faculty, guaranteeing a stimulating study experience.

Tom Cinbis, 22
German, 2nd semester

I was interested in computers from an early age and I always wanted to learn more, so I chose to pursue a computer science degree. The possibility of programming huge structures or analysing data in scales that exceed human capabilities fascinates me. Also, computer science allows me to work on problems that affect many people and hopefully improve their lives in some way. I chose ETH Zurich for my Master's degree because it offers a great selection of lectures which I'm free to combine into a curriculum that matches my interests. The people at ETH are passionate about their work and you can always find someone to exchange ideas with. Passion for your subject also helps you persevere during tough periods in your studies.

Xiaojing Xia, 25
Chinese, 3rd semester

I wanted a change after studying and working in the United States for six years, so I decided to come to ETH Zurich for my Master's degree. ETH is known for its highly skilled graduates and the people I've met here truly enjoy learning about all aspects of computer science. Not only is it an excellent environment for studying, but its reputation will give your career a boost. There are also many opportunities to enjoy student life in among the heavy course load. You can play sports at ASVZ or use the convenient public transport to discover Switzerland. In addition, Zurich lies in the centre of Europe, making it an ideal location to travel as well as to meet people from different countries.

Simona Hohl, 25
Swiss, 4th semester

I completed my Bachelor's degree at ETH Zurich before pursuing my Master's. I didn't like going to school but to my surprise, I love studying – it's much more challenging and interesting. It takes hard work to learn and understand everything that we're taught, but you're not doing it alone. You and your fellow students work as a team. This is my favourite part about studying – I have made many friends at ETH. The courses offered are excellent, which allows you to pursue many different career paths. I'm very interested in theoretical computer science because it gives you the opportunity to think long and hard about a problem. But I also enjoy other areas of computer science and plan to work as a consultant or to join a start-up.

Katharina Boersig, 24
German, 2nd semester

I have two Bachelor's degrees, one in computer science and one in physics. For my Master's, I chose computer science: not only is it more fun, but it also has a greater impact on the future. I wanted to learn from the best people in the field, so I applied to ETH Zurich. The immense variety of courses and workshops on offer and the high quality of teaching sealed the deal for me. The courses are challenging and time-consuming, but well worth the effort. After all, computer science is needed almost everywhere, giving you a lot of choices for careers and specialisations. For my part, I want to use my degree to make a positive impact on the world, be it with an NGO, a company or my own start-up.

David Yenicelik, 22
German/Turkish, 4th semester

Studying at ETH Zurich is mentally stimulating and fun. There's always another subject or a new perspective you can discover, and ETH pushes its students to reach their intellectual limits and beyond. The economic resources of ETH enable impressive research, some of which gets transferred to industry. And it also has excellent infrastructure to allow for student projects, on which you can work with like-minded people from around the globe. I worked on various side projects and as a research assistant throughout my Master's studies. This taught me a lot and brought me together with people who share my interests. For example, we founded Swissloop, a student organisation that builds pods for the SpaceX Hyperloop competition.

Professional outlook and career opportunities

ETH graduates enjoy an excellent reputation in Switzerland and worldwide. After completing their studies, graduates work across the globe in both industry and academic research, often in leading positions.

Excellent prospects
Most ETH Zurich computer science alumni work as software engineers, consultants, IT architects or in sales and pre-sales for companies across a wide range of industries, such as finance, public transport, health care, one of the many branches of the technology industry or in the biotech sector. Roles within the automotive, robotics or the video and games industry are equally fascinating, and computer scientists are always in demand in these areas.

After a few years gaining professional experience, computer science graduates can look forward to getting fascinating and responsible jobs as experts or leaders. For example, many work in diverse roles such as project managers, members of the executive board or CIOs (Chief Information Officers).

Entrepreneurial success
Some computer scientists dream of founding their own start-up company. To this end, ETH Zurich and its associated organisations offer students a wide range of courses and programmes to help them acquire the necessary knowledge and contacts for self-employment during their degree. Over the years, numerous former ETH computer scientists have established start-ups, many of which have developed into successful companies, such as Doodle, Ubique, Duolingo or Comerge.

A scientific career
For those Master's students whose passion for science in general and a specific field in particular continues to grow during their studies, there is the possibility to apply for a doctoral programme, either in one of the internationally renowned research groups of the Department of Computer Science or at another prestigious university.

Computer science alumnus Urs Hölzle was one of the first ten Google employees and is now Senior Vice President for Technical Infrastructure at Google.

From science to business
Sometimes students develop an innovative product idea while undertaking university research. When this happens, ETH Zurich supports them in their efforts to transfer research results to industry, for example by licensing them to external companies or by supporting the researchers as they set up their own company.

Since 1993, members of the Department of Computer Science have founded 50 spin-offs, including Scandit, GetYourGuide, DeepCode, Teralytics, Anapaya Systems, Auterion and Beekeeper – just to name a few. ETH Zurich offers its spin-off entrepreneurs valuable business advice, provides them with premises at a discounted rate and supports them in establishing important and useful contacts. ■

Beekeeper: the spin-off connecting frontline workers around the world

From a student dating app to an essential communication platform for hundreds of thousands of frontline workers all over the world, the ETH spin-off Beekeeper has come a long way from its humble beginnings.

Flavio Pfaffhauser & Cristian Grossmann

It's easy for a company to reach an office worker: desk-bound employees have access to email and a variety of other communication software. But over 80 percent of all workers worldwide hardly ever set foot in an office. They work in factories, distribution centres, hotels, construction sites, retail stores – and they need to receive information from the company to do their job well just as much as their office counterparts. Beekeeper, a spin-off company founded by two ETH students, connects these workers to their managers and to each other.

In the beginning, computer science Master's student Flavio Pfaffhauser and electrical engineering doctoral student Cristian Grossmann set out to make a dating app for students at ETH Zurich. It quickly grew into a general social platform. Its success made Pfaffhauser and Grossmann wonder: what else could it be used for? In 2012, they co-founded Beekeeper. As an official ETH spin-off, the young company was able to take advantage of benefits such as business counselling, networking opportunities and affordable office space. "It was the perfect time to start a company," Pfaffhauser says. "We were young, we had received an excellent education and we had nothing to lose. Had we failed, we could've found a job quickly."

Far from failing, Beekeeper soon became the fastest-growing company in its sector. Today, it has around 200 employees working in Zurich, the San Francisco Bay Area, Berlin and Krakow. Hundreds of thousands of frontline workers in over 130 countries use the smartphone-based platform, from the pizza giant Domino's to London's Heathrow Airport or the Swiss building materials manufacturer Holcim. And even though Flavio Pfaffhauser no longer gets to do much programming in his role as Chief Innovation Officer, many of the software engineers who develop Beekeeper are ETH graduates themselves. ■

Since 2012, the ETH spin-off Beekeeper has been connecting employees without a desktop computer with both other team members and the entire company, enabling communication and exchange in real time.

ETH Zurich – where the future begins

Where once Albert Einstein studied and taught: the Main Building of ETH Zurich is one of the city's landmarks.

Freedom and personal responsibility, an entrepreneurial spirit and openness to the world: Switzerland's core values were also central to the foundation of ETH Zurich. The roots of this technical and scientific university go back to 1855, when the founders of modern Switzerland created this place of innovation and knowledge. At ETH Zurich today, students find an environment that demands independent thinking, while researchers enjoy a climate that inspires them to achieve excellence. Located at the heart of Europe and part of a worldwide network, ETH Zurich develops solutions for the global challenges of today and tomorrow.

For the benefit of society
ETH Zurich currently has over 22,500 students from more than 120 countries, of whom almost 4,500 are doctoral students. More than 520 professors teach and conduct research in the fields of engineering, architecture, mathematics, natural sciences, systems-oriented sciences, management and social sciences.

The findings and innovations of ETH Zurich researchers are incorporated into some of the fastest-growing and most promising sectors of the Swiss economy: from IT, micro and nanotechnology to high-tech medicine. Each year, ETH applies for around 100 patents and 150 inventions. More than 500 spin-off companies have emerged from the university.

Top rankings
ETH Zurich is an institution with regional and national roots that is fully integrated into the international academic community. It measures itself in all respects against the world's leading universities – from its education and research to its management.

In international rankings, ETH Zurich regularly features as one of the best universities of technology and natural sciences in the world and as the leading university in its field in continental Europe.

Bright minds
The 21 Nobel laureates who have studied, taught or conducted research at ETH Zurich underline the excellent reputation of the university. Among the prize winners are Wilhelm Konrad Röntgen (1901), Albert Einstein (1921) and Kurt Wüthrich (2002). A Turing Award, popularly labelled the Nobel Prize in Computer Science, was awarded to Niklaus Wirth (1984), one of the earliest computer scientists and inventor of the Pascal programming language. ∎

www.ethz.ch

Living and studying in Switzerland and Zurich

Everyday student life can be quite stressful and demanding. This makes it all the more important to have a well-organised learning setting, a strong social environment and a good balance between study and leisure time.

Where quality of life and beauty meet
Switzerland is famous for its political and economic stability, public safety and extraordinary beauty. National institutions like schools, healthcare providers and public transportation are of excellent quality. Many Swiss people are multilingual and, especially in the cities, English is often spoken. German is not required for a Master's programme at ETH, but a basic knowledge will help when settling in.

Zurich is Switzerland's largest city. It is truly international and ethnically diverse, offering a modern lifestyle and a vibrant nightlife. For many years, Zurich has been ranked among the top cities in the world for quality of life.

Centrally located with a view
ETH Zurich's campuses are distinguished by their central locations and are easily accessible by public transport. The Zentrum campus, with its historic Main Building, is within walking distance of the beautiful old town, which is replete with restaurants, cafés, museums and galleries. It is also close to a long promenade next to the lake that stretches more than 30 km towards the mountains.

A caring community
ETH provides a safe and pleasant environment that contributes to an inspirational learning experience. The university embraces diversity, and places strong emphasis on values such as respectful interaction as well as taking individual responsibility.

To enable growth and learning outside the classroom, ETH students and their associations provide a wide range of services for their peers. With networking events, parties, barbecues, dance classes, the photography lab, music rooms, cultural and artistic projects, the entrepreneur club and the facilities provided by the Student's Projects House, it is fair to say that there is something for everyone.

For brain, body and soul
Physical activity and a healthy lifestyle are part of the university's culture. The Academic Sports Association Zurich (ASVZ) provides state-of-the-art athletic facilities and over 120 different activities and sports, including outdoors, utilising Switzerland's beautiful mountain and lake landscape. ∎

www.ethz.ch/student-life

Who? What? Where?

Address
ETH Zurich
Department of Computer Science
Universitätstrasse 6, CAB
8092 Zurich
Switzerland

Studies Administration Office
General questions, administrative concerns and study counselling
Denise Spicher
+41 (0)44 632 72 11
master@inf.ethz.ch

Application and admission
Depending on the selected Master's programme and where the Bachelor's degree has been earned, a different admission process applies.

Bachelor's degree from ETH Zurich:
Some Master's degree programmes require a formal application, while others permit direct registration.

Bachelor's degree from other Swiss or foreign universities:
All students from other Swiss or foreign universities must apply at the Admissions Office.

Before starting the admission process, please check your eligibility:
www.ethz.ch/application

Admissions Office
All information regarding the admission process is provided by the Admissions Office.
www.admission.ethz.ch

Application deadlines
First application window:
1 November – 15 December mandatory for:
– students with a bachelor's degree from outside Switzerland
- students who wish to apply for the Excellence & Opportunity Scholarship programme (ESOP) or a Direct Doctorate programme (DD)
- Students with a Master's degree/PhD from a Swiss university who obtained their undergraduate degree outside Switzerland

Students with a Swiss Bachelor's degree are also welcome to apply during this period.

Second application window:
1 April – 30 April
Only available for students with a Swiss Bachelor's degree.

Dates are subject to change. Please visit the admission office website.

Financial information
ETH Zurich is committed to providing affordable education and, in contrast to most other top universities, keeps tuition fees to a minimum. Tuition and semester fees at ETH amount to around CHF 800 per semester. In addition, it is estimated that students spend CHF 20,000 to CHF 26,000 on study and living costs each year.
www.ethz.ch/financial

Scholarships
It is primarily the responsibility of students and their families to finance their studies. If their means are insufficient, students may file a scholarship request or apply for the Excellence Scholarship & Opportunity Programme.
www.ethz.ch/scholarships

Student organisations
www.vis.ethz.ch
www.vseth.ethz.ch
www.ethz.ch/int-student-associations

Committee for students without ETH Bachelor
vis.ethz.ch/moeb

Campus life
www.ethz.ch/student-life
www.asvz.ch
www.gastro.ethz.ch
www.bqm-bar.ch
www.ethz.ch/sph

Accommodation
www.wohnen.ethz.ch
www.woko.ch
www.wgzimmer.ch
www.students.ch
www.homegate.ch
www.ronorp.net

Social Media
www.facebook.com/ETHInformatik
www.twitter.com/csateth
www.linkedin.com/school/csateth
www.youtube.com/ETHInformatik

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